

IFW

Docket No.: 066872-0030 (P-AR 5748)

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of	:	Customer Number: 41552
Liang, Yanbin, et al.	:	Confirmation Number: 1786
Serial No.: 10/688,790	:	Group Art Unit: 1646
Filed: October 17, 2003	:	Examiner: Not yet known
For: HUMAN PROSTAGLANDIN EP4 RECEPTOR VARIANTS AND METHODS OF USING SAME	:	CERTIFICATE OF MAILING (37 CFR. § 1.8(a))

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail as First Class Mail under 37 CFR 1.8(a) in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on June 17, 2004.

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**INFORMATION DISCLOSURE STATEMENT**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In accordance with the provisions of 37 C.F.R. 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the documents listed on the attached form PTO-1449. It is respectfully requested that the documents be expressly considered during the prosecution of this application, and that the documents be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is being filed within three months of the U.S. filing date OR before the mailing date of a first Office Action on the merits. No certification or fee is required.

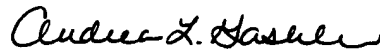
The relevance of each non-English language reference, if any, is discussed in the present specification.

Inventors: Liang, Yanbin, et al.  
Serial No.: 10/688,790  
Filed: October 17, 2003

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 502624 and please credit any excess fees to such deposit account.

Respectfully submitted,

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[illegible][illegible]

EXAMINER'S INITIALS	CITE NO.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
		Bastepe and Ashby, "The Long Cytoplasmic Carboxyl Terminus of the Prostaglandin E <sub>2</sub> Receptor EP <sub>4</sub> Subtype Is Essential for Agonist-Induced Desensitization," <u>Mol. Pharm.</u> 51:343-349 (1997).	
		Bastien et al., "Cloning, Functional Expressions, and Characterization of the Human Prostaglandin E <sub>2</sub> Receptor EP <sub>2</sub> Subtype," <u>J. Biol. Chem.</u> 269:11873-11877 (1994).	
		Breyer and Breyer, "G Protein-Coupled Prostanoid Receptors and the Kidney," <u>Annu. Rev. Physiol.</u> 63:579-605 (2001).	

EXAMINER	DATE CONSIDERED
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Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

<b>INFORMATION DISCLOSURE</b> <b>CITATION IN AN APPLICATION</b>  <b>(PTO-1449)</b>		ATTY. DOCKET NO. <b>066872-0030</b> <b>(P-AR 5748)</b>	SERIAL NO. <b>10/688,790</b>
		APPLICANT <b>Liang, Yanbin, et al.</b>	
		FILING DATE <b>October 17, 2003</b>	GROUP <b>1646</b>
		Coleman et al., "VIII. International Union of Pharmacology Classification of Prostanoid Receptors: Properties, Distribution, and Structure of the Receptors and Their Subtypes," <u>Pharmacol. Rev.</u> 46:205-229 (1994).	
		Desai et al., "Comparison of Agonist-Induced Internalization of the Human EP2 and EP4 Prostaglandin Receptors: Role of the Carboxyl Terminus in EP4 Receptor Sequestration," <u>Molecular Pharmacology</u> 58:1279-1286 (2000)	
		Escribano et al., "cDNA from human ocular ciliary epithelium homologous to beta ig-h3 is preferentially expressed as an extracellular protein in the corneal epithelium," <u>J. Cell. Physiol.</u> 160:511-521 (1994).	
		Foord et al., "The Structure of the prostaglandin EP <sub>4</sub> receptor gene and related pseudogenes," <u>Genomics</u> 35:182-188 (1996).	
		Fujino et al., "Phosphorylation of Glycogen Synthase Kinase-3 and Stimulation of T-cell Factor Signaling following Activation of EP <sub>2</sub> and EP <sub>4</sub> Prostanoid Receptors by Prostaglandin E <sub>2</sub> ," <u>J. Biol. Chem.</u> 277:2614-2619 (2002).	
		Kabashima et al., "Prostaglandin E <sub>2</sub> -EP <sub>4</sub> signaling initiates skin immune responses by promoting migration and maturation of Langerhans cells," <u>Nature Med.</u> 9:744-749 (2003).	
		Mori et al., "Gene expression of the human prostaglandin E receptor EP <sub>4</sub> subtype: Differential regulation in monocytoid and lymphoid lineage cells by phorbol ester," <u>J. Mol. Med.</u> 74:333-336 (1996).	
		Mutoh et al., "Involvement of Prostaglandin E Receptor Subtype EP <sub>4</sub> in Colon Carcinogenesis," <u>Cancer Res.</u> 62:28-32 (2002).	
		Neuschafer-Rube et al., "The C-terminal domain of the human EP <sub>4</sub> receptor confers agonist-induced receptor desensitization in a receptor hybrid with the rat EP <sub>3B</sub> receptor," <u>FEBS Lett.</u> 415:119-124 (1997).	
		Nishigaki et al., "Two G <sub>s</sub> -Coupled Prostaglandin E Receptor Subtypes, EP2 And EP4, Differ In Desensitization And Sensitivity To The Metabolic Inactivation Of The Agonist," <u>Mol. Pharmacol.</u> 50:1031-1037 (1996).	
		Okuyama et al., "Activation of prostaglandin E <sub>2</sub> -receptor EP <sub>2</sub> and EP <sub>4</sub> pathways induces growth inhibition in human gastric carcinoma cell lines," <u>J. Lab. Clin. Med.</u> 140:92-102 (2002).	
		Sales et al., "Cyclooxygenase-2 expression and prostaglandin E(2) synthesis are up-regulated in carcinomas of the cervix: A possible autocrine/paracrine regulation of neoplastic cell function via EP <sub>2</sub> /EP <sub>4</sub> receptors," <u>J. Clin. Endocr. Metab.</u> 86:2243-2249 (2001).	
		Segi et al., "Patent ductus arteriosus and neonatal death in prostaglandin receptor EP <sub>4</sub> -deficient mice," <u>Biochem. Biophys. Res. Comm.</u> 246:7-12 (1998).	
		Sheng et al., "Prostaglandin E <sub>2</sub> Increases Growth and Motility of Colorectal Carcinoma Cells," <u>J. Biol. Chem.</u> 276:18075-18081 (2001).	
		Stillman et al., "A conserved threonine in the second extracellular loop of the human EP <sub>2</sub> and EP <sub>4</sub> receptors is required for ligand binding," <u>European J. Pharm.</u> 357:73-82 (1998).	

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		APPLICANT <b>Liang, Yanbin, et al.</b>	
		FILING DATE <b>October 17, 2003</b>	GROUP <b>1646</b>
		Takayama et al., "Prostaglandin E <sub>2</sub> Suppresses Chemokine Production in Human Macrophages through the EP <sub>4</sub> Receptor," <u>J. Biol. Chem.</u> 277:44147-44154 (2002).	
		Woodward and Lawrence, "Identification of a single (FP) receptor associated with prostanoid-induced Ca <sup>2+</sup> signals in Swiss 3T3 cells," <u>Biochem. Pharmacol.</u> 47:1567-1574 (1994).	
		Woodward, et al "The Molecular Biology and Ocular Distribution of Prostanoid Receptors," <u>Surv. Ophthalmol.</u> 41:S15-S21 (1997).	
		Yoshida et al., Stimulation of bone formation and prevention of bone loss by prostaglandin E EP <sub>4</sub> receptor activation," <u>Proc. Nat. Acad. Sci.</u> 99:4580-4582 (2002).	
		GenBank Accession No.: AA019996 – ze62d09.sl Soares...[gi:1483669]	
		GenBank Accession No.: AA829989 – oc43e03.sl NCI_CG...[gi:2903088]	
		GenBank Accession No.: AC093264 – Homo sapiens chromosome 5 clone RP11-263G2, complete sequence.	
		GenBank Accession No.: BF438513 – nab92g06.x1 NCI_C...[gi:11451030]	
		GenBank Accession No.: CB054894 – NISC_gm06g11.x1 N...[gi:27793181]	
		GenBank Accession No.: D28472 – Human mRNA for prostaglandin E receptor EP <sub>4</sub> subtype, complete cds.	
		GenBank Accession No.: NP_000949 – prostaglandin E receptor 4, subtype EP <sub>4</sub> , PGE receptor, EP <sub>4</sub> subtype; prostaglandin E <sub>2</sub> receptor [Homo Sapiens].	
		GenBank Accession No.: P32240 – Prostaglandin E <sub>2</sub> receptor, EP <sub>4</sub> subtype (Prostanoid EP <sub>4</sub> receptor) (PGE receptor, EP <sub>4</sub> subtype).	

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